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ABSTRACT

This report examines needs for notetaking services by deaf or hard of hearing students at the postsecondary level and ways of providing these services. It discusses training, supervision, the responsibilities of those involved in provision of notetaking services, and policies and procedures for providing useful and efficient notetaking services. Individual sections address the following topics: (1) listening and the process of good notetaking; (2) general suggestions for individuals taking notes for deaf and hard of hearing students; (3) what to look for in a good notetaker; (4) the notetaker code of ethics; (5) policies regarding the notetaking process; (6) training notetakers; (7) role of the notetaker coordinator; (7) planning for notetaking; (8) paid versus volunteer notetaking; (9) responsibilities of students who use notetaking services; (10) faculty responsibilities; (11) applications of technology in notetaking; (12) other technologies; and (13) laws and regulations. Appendices include a sample notetaker code of ethics, a notetaking application rating form, and a form for evaluating notes. (Contains 13 references.) (DB)

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National Task Force on Quality of Services
in the Postsecondary Education of
Deaf and Hard of Hearing Students

Report on
NOTETAKING FOR DEAF AND HARD OF HEARING STUDENTS

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National Task Force on Quality of Services in the
Postsecondary Education of Deaf and Hard of Hearing Students

Report on
NOTETAKING FOR DEAF AND HARD OF HEARING STUDENTS

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Editor's note

This is one in a series of reports intended to assist postsecondary institutions in developing and maintaining special services of quality as needed by their deaf and hard of hearing students. Each report has been prepared with postsecondary administrators, faculty, and staff uppermost in mind, and particularly those most likely to have a role in providing services to these students. It is anticipated that these reports will be useful also to deaf and hard of hearing students in gaining more information about services for which they may be eligible.

A challenge in authoring and editing each of these reports is to avoid giving the impression that all the information they contain pertains equally to all deaf and hard of hearing students at the postsecondary level. Of course this is not so. These students are individuals first, and their needs and wishes for special services and other accommodations will vary, as will characteristics of the particular colleges and universities they as individuals choose to attend.

Also, it is a challenge to write about needs and services for both deaf and hard of hearing students together. While they do share a hearing loss, the magnitude of their hearing loss ranges collectively from mild to profound. But while the special needs of deaf students may be more apparent than those of hard of hearing students, the special needs of hard of hearing students are no less real.

Fifteen reports are scheduled for distribution in 1997 and 1998, each with a different focus and each authored by a working committee of experts on a particular subject. All are members of a **National Task Force on Quality of Services for Postsecondary Deaf and Hard of Hearing Students**. This task force was formed in 1994 and numbers 100 members associated with 32 two and four-year colleges in 28 states and provinces in the United States and Canada.

Readers are free to cite information and views from each of the reports and to duplicate and share copies. In return, they are asked to cite the names of its authors and make bibliographic reference to the report.

– Ross Stuckless

NOTETAKING FOR DEAF AND HARD OF HEARING STUDENTS

Donald Hastings, Kim Brecklein, Sandy Cermak, Rondalyn Reynolds, Harlene Rosen, Jimmie Wilson[1]

INTRODUCTION

The provision of notetaking services is crucial for most deaf and hard of hearing students at the postsecondary level in classes designed for students with normal hearing. Numerous authors have attested to its importance (Saur, 1992; English, 1993; Osguthorpe, Wilson, Goldmann & Panara, 1980; Wilson, 1981, 1996). Collectively, more deaf and hard of hearing students in mainstreamed postsecondary settings use notetaking services than any other available support service (Lewis, Farris & Greene, 1994).

It has been said that having an interpreter guarantees equal access to the classroom, but having a notetaker guarantees equal access to the information from the class. Like tutors and the use of assistive listening devices in the classroom, each serves its own useful function; they are not redundant.

Until formal notetaking services began to be instituted in the late 1960's (Stuckless, 1969), deaf and severely hard of hearing students in college tended to do without notes, relying almost exclusively on the textbook for review, or in some instances after the introduction of portable audiotape recorders, recording the lecture and asking someone to transcribe it on paper. Sometimes the student would ask a hearing classmate if he/she might borrow the classmate's notes, but was often rebuffed. If the classmate chose to be accommodating, the deaf or hard of hearing student still had no assurance of the notes' quality or legibility.

Today, the ways in which notetaking services are provided from one postsecondary institution to another depend on several factors such as the number of students needing the services, the size and type of class, the individual student's ability to make use of the services, and program limitations. This report will discuss services that can be implemented over a range of institutions, from those serving only one or two deaf and/or hard of hearing students, to those with large numbers.

A deaf or hard of hearing student must get information by looking at a speaker or an interpreter and will probably find writing notes at the same time difficult. Yet some administrators considering establishing notetaking services continue to say, "But the student already has an interpreter. Why is a notetaker needed also?" or "Giving this much help is 'babying' the student. I can't go along with a notetaker, too." Questions and comments like these can be answered quickly with a reminder of how much deaf and hard of hearing students depend on their vision, making it difficult if not impossible to look at their instructor or interpreter and write adequate notes for themselves at the same time.

This report is intended to clarify (i) needs for notetaking services and (ii) ways of providing these services. Training, supervision, and the responsibilities of those involved in their provision will be discussed, along with suggested policies and procedures for assuring a useful and efficient service to students. For these, the authors drew considerable information from CSUN's *Notetaker's handbook and NTID/RIT's Guide to Notetaking Services.*

LISTENING AND THE PROCESS OF GOOD NOTETAKING

A good notetaker must be a good listener. Listening in turn requires active concentration. It is purposeful and self-monitoring. Many students who become notetakers are already skilled listeners, but listening skills can always be enhanced with practice. The following suggestions contribute to good listening, hence to good notetaking.

Be interested. A good listener tries to find something interesting and useful in what he/she hears, and waits until he/she has heard an entire presentation before judging it.

[1] In the order listed above, the authors are associated with Tulsa Community College (Tulsa, Oklahoma), Tulsa Community College, St. Paul Technical College (St. Paul, Minnesota), Tulsa Community College, California State University at Northridge (Northridge, California), and National Technical Institute for the Deaf (Rochester, New York).

Ignore speakers' faults in delivery. Even though a speaker's mannerisms, clothes, voice, or delivery may be distracting or annoying, a skilled listener focuses on the message by listening for the content and looking for body language clues that will help identify main ideas.

Listen for concepts. Isolated facts are meaningless and difficult to remember; accomplished listeners relate them to central themes and principles and make associations with their own experiences. A lecture outline from the instructor is very helpful in assisting a notetaker in this task.

Pay attention. A high level of concentration is needed to select important information and to retain it while writing it down, all this time continuing to monitor the ongoing presentation.

Discourage distractions. Allowing distracting conversations and behavior from classmates detracts from attention, and if necessary, the notetaker should politely ask these distractors to be quiet.

Regard difficult material as a challenge. Concentration is required in order to understand complicated or technical information in class.

Listen for cues as to importance. These cues can be explicit or implicit. Explicit cues are those stated directly, as in "Remember this". Implicit cues include voice inflection, loudness, and repetition, and indicate that information is important. Information written on the chalkboard is often significant and should be copied in the notes.

NOTETAKING FOR DEAF AND HARD OF HEARING STUDENTS

The following general suggestions are intended for the individual taking notes as a service to deaf or hard of hearing students.

Appearance of notes. The appearance of notes can either draw or repel the reader. Main topics should be clearly defined. Margins should be wide, and indentations to separate information should be used liberally. Pages should not be densely covered with notes; a reasonable amount of white space should be maintained on each page to permit the notetaker or the user of the notes to add information later.

The consistent use of standard formatting cues such as capitalization, underlining, and asterisks will help to clarify the information being presented. Rules, warnings, and important information should be emphasized. Lists, diagrams, and illustrations should be used whenever possible.

Language. Students with a major hearing loss often have problems with the English language. To facilitate reading comprehension, notes should employ simple sentence constructions, e.g., write verbs in the simple present or past tense and in the active voice.

Difficult and technical vocabulary should be defined in simple terms. When necessary, examples should be given to better explain concepts and relationships.

Organization. Information should be organized and presented in a logical manner. The sequence of facts and information should make sense to the reader. To assist the notetaker in this task, he/she can ask the instructor for an outline of the lecture notes or a clarification of the concepts being taught.

If the notetaker misses information during a class, he/she should leave a space in the notes for later clarification by the instructor. Notes must be as clear and complete as possible. In order to produce high quality notes, the notetaker may need to rework the notes after the class.

Assignments and tests. It is particularly important that the notetaker record in detail the assignments given to the class, including their due dates and other information important in carrying out the assignment. Complete information that is given the class by the instructor about upcoming tests should also be recorded clearly.

Feedback from the student. The notetaker should seek feedback from the student(s) for whom he/she is taking notes and adapt the notes to the student's language and instructional needs. Students should be encouraged to share with the notetaker any concerns and suggestions they have pertaining to their notetaking needs in the course.

Mechanics of notetaking. The following are specific suggestions concerning some of the details of notetaking for deaf and hard of hearing students (Osguthorpe et al., 1980).

(a) record course name and date at the top right corner of the first page, and number each page

(b) use regular size notebook paper (8 1/2" by 11"); use one side only; if the notes are to be

photocopied, some notetakers prefer spiral notebooks over looseleaf paper as a way of keeping the notes organized - the disadvantage of spiral notebooks is that they do not allow the insertion of handouts and other material

(c) write with a black fine-point pen, which is easy to read and reproduces well

(d) write legibly; unintelligible notes are useless to their readers

(e) provide blank spaces when information is missed to allow the notetaker or user of the notes to fill in the blanks when the information is obtained from the instructor or another student

(f) use accurate spelling; if the notetaker is unsure of a word, he or she should identify the word in question with a "sp?"; the notetaker can later verify the term through the text, instructor or dictionary.

In summary, the notetaker records as much as possible of what is said in class during lectures, discussions, reports, or media presentations such as films or videos. The notes should be written as if the deaf student had not been in class so that the notes are a complete picture of everything that happened in the class. A skilled notetaker not only includes most of what is said, but imposes order on the notes in the form of highlighting main topics or themes as the instructor indicates them.

What to look for in a good notetaker

To recruit competent notetakers, coordinators or supervisors should look for the following traits and skills in a notetaker:

(a) knowledge of content area

(b) ability to listen and store information while writing

(c) appropriate work behaviors including punctuality, dependability, flexibility, responsibility, unobtrusiveness, and professionalism

(d) strong English language skills

(e) ability to take notes manually, incorporating speed and accuracy in recording information while observing good notetaking practices

(f) understanding of the language issues faced by many deaf and hard of hearing students

(g) if the notetaker is a student, demonstration of strong academic performance, e.g., GPA minimum of 3.0

(h) if the individual is expected to take notes for students who sign, signing skills are an asset

(i) willingness to adhere to a code of ethics prescribed for notetakers.

If the notetaker is expected to use a laptop computer to take notes, applicants should demonstrate the following computer skills:

(a) keyboarding skills

(b) knowledge of DOS and Windows

(c) ability to maintain computer files

(d) ability to set up and take down a computer-assisted notetaking system in a timely manner.

Notetaker Code of Ethics

As a representative of the educational institution, the notetaker should behave in a professional manner. Expected behaviors include being punctual, confidential, respectful, cooperative, unbiased, appropriately dressed, and avoiding counseling, advising, and interjecting personal opinions.

California State University at Northridge has developed a notetaker's code of ethics and guidelines for structuring the activities of notetakers for deaf and hard of hearing students in that institution. An adaptation of that code is presented in Appendix A. Its six principal statements are as follows:

1. Notetakers shall keep all assignment-related information strictly confidential.
2. Notetakers shall transcribe lectures as faithfully and completely as possible.
3. Notetakers shall not (use the notes to) advise, interject personal opinion, or counsel the student.
4. Notetakers shall not counsel or advise (the instructor or student).
5. Notetakers shall choose assignments appropriate to their experience or skill in the subject area.
6. Notetakers shall comport themselves in a manner appropriate to the situation (referring to dress and conduct).

Policies regarding the notetaking process

Institutions offering organized notetaking services should have a written policy and procedures handbook for its notetakers. While no single institution's handbook is likely to apply fully to other institutions, some of its policies and procedures may. A handbook developed at California State University at Northridge includes the following pertaining to the notetaker and other related variables.

Class Assignments. The notetaker supervisor will oversee the assignment process to ensure a proper match for each class. Notetakers are encouraged to

notify the notetaker supervisor of the hours and types of classes they prefer.

Taking into account the needs of the student and the difficulty of the class, the supervisor will make the assignment based on the notetaker's skill (including computerized notetaking and stenographic skills where applicable), subject area expertise, and personal preference. The supervisor will address safety issues by carefully monitoring schedules to allow breaks necessary to prevent repetitive motion injuries (see section under "Keyboard-input technologies and repetitive motion injuries").

Introducing oneself. Before the start of the first class, the notetaker should introduce him/herself to students and instructors and explain his/her role in the classroom.

Attendance. Notetakers must be in class every day. When notetakers must miss a class, they should submit a request for a substitute to their supervisor at least 24 hours in advance. Frequent or excessive requests for substitutes may result in reduction of assigned notetaking hours.

Punctuality. Notetakers should arrive a few minutes early to each class to allow time to get set up. For computer-assisted notetaking or real-time captioning, arriving early to class to set up the hardware is extremely important. This technology is discussed later in the present report under "Applications of technology in notetaking" and in more detail in another report in the series titled, "Real-time speech to text".

Student tardiness and absence. The notetaker who takes notes manually should wait outside the room until the student arrives. If a student does not show up for a class within 10 minutes, the paid notetaker should notify the supervisor immediately for possible reassignment for that time period.

Attire. Notetakers should wear a notetaker badge to help students and faculty identify them. Notetakers should dress appropriately for the situation and be a positive reflection of the department they represent.

Supervision. The supervisor of notetaking services is responsible for critiquing and evaluating the notes. In addition, the supervisor is the primary contact for notetakers should problems arise.

Sharing of notes. The notetaker's first obligation is to the deaf and hard of hearing students for whom the notes are being taken. Generally, a second copy is filed in the office of support services or the office of the notetaker coordinator. If the deaf or hard of hearing students in these courses are being tutored, their tutors should also have access to the notes.

The notetaker should give the instructor a copy of each day's notes. The evaluation of the notes by faculty helps to ensure quality. In some institutions, this set of notes belongs to the instructor to use as he or she wishes, including sharing them with other students who may need them. In other institutions, notes belong to the service department and their use is restricted to direct use by deaf and hard of hearing students enrolled in the course, their instructor, and their tutor.

Evaluations. The notetaker will be evaluated by the supervisor, student, and other individuals such as faculty, tutors, and master notetakers when applicable. The supervisor will coordinate the evaluation process and meet with each notetaker at the end of each semester for an informal evaluation, at which time notetakers will also turn in a copy of their notes for their files. Students also evaluate the notetakers once a term. Faculty and tutors may also be involved in the evaluation process.

Photocopies and NCR paper. Ideally, students should receive a copy of the notes immediately after class. However, a short lag time may be necessary when several deaf and/or hard of hearing students take the same class. Procedures for timely copying should be clear and reliable.

NCR (National Cash Register) paper should be made available to volunteer and paid notetakers as well as to deaf or hard of hearing students. NCR paper works on the order of carbonized paper and will be discussed further in the section on "Applications of technology in notetaking".

Payroll. Notetakers must completely fill out all required documents before their names are entered on the payroll. In addition, the notetaking staff must turn in signed time sheets on the published dates.

Pay scale. The institution will establish the pay scale. The pay scale should be based on the notetaker's skill, experience, and education.

Recruitment methods. Recruitment of notetakers will include word of mouth, campus flyers,

networking with campus or nearby college departments of deaf education and interpreter training programs, court reporting schools (for real-time captioning), and posting job announcements in the student employment office.

Selection criteria. After the applicant completes the required employment documents, the notetaker supervisor will schedule an interview. Various evaluating instruments will then be administered to the applicant, including listening to a pre-recorded lecture and taking notes. The notes are scored against a rating form. (See Appendix B, "Notetaker Application Form.")

Student grievance. When their grievance concerns notes, students are encouraged to communicate concerns and suggestions first with their notetaker. If the problem or concern is not corrected, the student may contact the supervisor to help with its resolution. The supervisor will handle all matters of concern between notetakers and faculty/staff.

Training notetakers

Provisions for training. Institutions serving a large number of deaf and/or hard of hearing students should develop notetaking workshops and mentoring opportunities to promote professional growth among the notetakers. The notetaking supervisor should administer these activities. Wilson (1996) has written extensively on this topic, including training criteria, and has suggested agendas for notetakers and for students and faculty who use their notes.

Workshops. Workshops and other training opportunities may be scheduled both for groups and individuals. Such opportunities may include internal or external workshops related to notetaking skills. Generally these involve practice with audiotapes and videotapes on developing good listening and notetaking skills.

Notetakers may also take advantage of on or off-campus staff development sign language classes and Deaf culture workshops. Notetakers who use computers and/or stenographic machines to augment their notetaking are likely to benefit also from workshops and courses in these technologies.

Conferences focusing on support services for postsecondary deaf and hard of hearing students are also taking place in increasing numbers, offering more opportunities for professional development.

Mentoring from experienced notetakers. Placing inexperienced notetakers in classes with deaf or hard of hearing students and expert notetakers allows new personnel to observe classroom situations and to practice notetaking with a notetaker-mentor for a few days before they are placed in their own class. A buddy system which allows two beginning notetakers to communicate and to help each other in the same classroom has also been used successfully.

Also, the notetaker supervisor or a "master" notetaker should observe a notetaker once or twice a term in class to assist the less experienced notetaker in refining his/her skills. New notetakers should be observed and critiqued as many times as necessary to orient them correctly them to the task.

Postsecondary institutions serving large numbers of deaf and hard of hearing students may wish to employ master notetakers who in addition to providing direct notetaking services, can be mentors to newly hired notetakers and practicum students.

Role of the notetaker coordinator

This section from the NTID/RIT Notetaker Handbook lists coordinative responsibilities in a large notetaking program. Only programs which have a full-time notetaker coordinator are likely to be able to fulfill all the responsibilities outlined here. Smaller programs may opt to apportion essential responsibilities to current full-time staff members or to hire part-time employees to perform the most pressing of these functions. Institutions without a full-time notetaking coordinator should evaluate their current professional staff to determine who can best serve the greatest number of these functions.

The primary role of the notetaker coordinator is to oversee the entire notetaking needs for the college and to ensure a quality set of notes for each student receiving the service. The notetaker coordinator can also perform the same duties as a master notetaker if the demand for notetaking services is not so heavy as to prevent the coordinator from providing direct notetaking services.

The function of the notetaker coordinator includes:

Networking. Establishing and maintaining

communication with faculty, notetakers, students, and tutors to identify issues, needs, problems, and solutions. May also provide support for non-academic groups requesting notetaking support.

Quality assurance. Involving all relevant parties (faculty, student, and tutors) in ongoing evaluations of the notetakers' services. The notetaker coordinator has the primary responsibility for assuring the quality of notetaking services. In smaller programs this responsibility may fall to academic departments or even to individual instructors.

Planning/scheduling. Determining notetaking needs each term and scheduling notetakers to meet requests. Projecting future needs of students requesting services and curricular changes which might alter notetaking coverage. Assisting with the preparation of information needed to determine costs associated with notetaking.

Training and staff development. Coordinating the training and mentoring of notetakers. May also have responsibility for training deaf and hard of hearing students to use notes more effectively.

Supervision and management. Recruiting, interviewing, hiring, supervising, evaluating, scheduling, and terminating employees. Maintaining notetaking personnel/payroll records.

Before notetaking begins

Considerable attention should be given to planning before a notetaker enters the classroom for the first time. The scope of this planning will depend on factors such as the number of deaf and hard of hearing students needing the service, and whether the service is projected to be offered on a continuing basis. Regardless, planning the service for even a single student must take some of these factors into consideration.

Setting up a notetaking service includes the involvement of the major groups of participants: the department providing the service, classroom instructors, and deaf and hard of hearing students themselves.

Classroom climate. Some faculty members may feel uncomfortable with the presence of deaf and hard of hearing students in the classroom. As with other support services, this is a natural reaction to a new experience and faculty may need help to understand the importance of the notetaking service for deaf and hard of hearing students in their class (Wilson, 1996). This is best done by these students themselves and by their notetakers as needed, but may also warrant intervention on the part of the notetaking coordinator or other qualified student support personnel.

Hearing students in the class are likely to be curious about notetaking and other support services also, and the presence of the notetaker should be explained to the members of the class by the instructor, the deaf student, or perhaps by the notetaker to satisfy their curiosity. After a few days the notetaker will become part of the classroom environment.

Classroom seating. The notetaker, student, and instructor should discuss where the notetaker should sit and formally assign that seat to the notetaker. The notetaker must be able to see the instructor, the chalkboard, and any media used during the class. If they are not using interpreters, some deaf and hard of hearing students prefer to sit beside the notetaker in order to glance occasionally at the notes as they are written. In this situation, the notetaker functions as an interpreter also.

Access to instructional materials. The notetaker should have access to textbooks and other materials used in the class. Provision of these materials should be discussed with the instructor or the instructor's academic department. These materials can either be borrowed from the faculty member each day or loaned for the term. In addition, notetaking programs may request publishers' complimentary desk copies for notetakers if students submit their notetaking requests early enough.

If the textbook cannot be obtained from the faculty member, the department, or the publisher, the notetaker may need to sit beside the deaf student or hard of hearing student in order to have access to the textbook or materials. In this way, correct vocabulary, spelling, and page numbers are available to the notetaker.

Deaf and hard of hearing students as secondary notetakers

The deaf or hard of hearing student should be encouraged to take what notes he/she can, not sit

passively, secure in the knowledge that, "I don't have to worry; this will all be written in the notes." Writing notes for themselves, even rudimentary ones, helps students stay focused on the classroom proceedings. After the class, the student can compare his/her own notes with those prepared by the notetaker.

Deaf and hard of hearing students can receive training in how to take notes; this training will benefit them throughout their academic life and later in the workplace. Both Gallaudet University and the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology have developed videotaped training materials for this purpose.

Paid versus volunteer notetaking

Some postsecondary institutions use volunteers as notetakers. Typically, volunteer notetakers are recruited from classes in which deaf or hard of hearing students are also enrolled. The majority of these schools provide pressure sensitive (NCR) paper to the volunteers. This paper allows the volunteer notetakers to make several copies as they are writing, and to share the copies of their notes immediately after class (Stuckless, 1969). Some institutions find it more convenient to offer photocopy services to produce multiple copies of notes.

Notetakers of any kind are better than none; however, the preferred method for institutions to meet the classroom notetaking needs of their deaf or hard of hearing students is to use paid notetakers. The benefits of paid notetaking are generally greater than those of volunteer notetaking.

The benefits of paid notetaking services include:

(a) management of notes, ensuring quality control

(b) scope of training

(c) quality of notes, including better accuracy, legibility, completeness, adaptation for deaf or hard of hearing students

(d) recruitment, selection, and supervision of notetakers

(e) appropriate evaluation, including the ability to terminate,

(f) reduced role conflicts

(g) dependability of the service.

Voluntary notetaking services have two advantages over paid notetaking:

(a) minimal costs to provide the service

(b) availability of volunteers for most classes.

However, their disadvantages are numerous and significant:

(a) lack of control over the quality of notes

(b) primary intent of the notetaker is to meet his/her own notetaking needs rather than those of the deaf or hard of hearing student

(c) minimal supervision of volunteers

(d) problems with attendance, tardiness, withdrawals

(e) inability to terminate a volunteer for unsatisfactory service

(f) potential for role conflicts among student, teacher and volunteer notetaker

(g) high turnover of volunteer notetakers (Wilson, 1996).

The way a postsecondary institution chooses to pay for the notetaking service may depend on the number of students who need the service. If the institution has only a few students, the simplest way may be to hire part-time notetakers on an hourly basis and put them through a training seminar.

If the school serves a moderate number of students, it might look into setting up a stipend payable to the notetaker upon completion of the course. He/she might receive a small cash payment, tuition reimbursement, or tuition credit for the number of credit hours the course is worth.

Ideally, the notetaker will be a college student who has already taken the course for which the notetaking is requested. Again, the student goes through a training workshop before taking notes. Along with the stipend or tuition reimbursement or credit, additional "perks" such as priority registration or a recognition ceremony at the end of the semester may be adopted.

In some institutions, another option is to use workstudy students as notetakers. Although awards vary, a drawback is that for workstudy, the student must first qualify and be approved for financial aid and can be employed for a limited number of hours per week. Other drawbacks include high turnover and a work schedule which may conflict with class schedules.

Occasionally, civic or campus organizations look for opportunities to offer their time and talents, and

members may have an interest in becoming volunteer notetakers. These volunteers should be screened like any other paid or unpaid notetaker.

Student responsibilities

Deaf and hard of hearing students who use notetaking services also share its responsibilities. Among these are the following:

Requesting Services. As soon as students needing notetaking services have selected their courses for the following term, they should fill out a support service request form for each class for which they need notetaking. They should fill out a separate form for each lab, including those which are tied to classes for which they are also requesting notetaking.

Students should turn in these forms early to ensure that their needs can be met.

Dropping/adding classes. Students should fill out a new request form each time a course change affecting notetaking services is made. Informing their support department of a drop is as important as an add.

Meeting with the support team. When registering or at some other appropriate time, students should make contact with the notetaker coordinator (and other service coordinators) to become acquainted and to discuss any concerns they or those responsible for providing support services might have.

In class. Students should introduce themselves to their notetaker and instructor, and inform them of any special needs they might have. If these needs are extraordinary and require special attention, e.g., for vision problems, the student should make these needs known well in advance of the first class meeting.

Students should learn to take notes as much as possible in spite of having a notetaker, to help with their comprehension and retention of classroom information.

Class attendance and punctuality. Students should receive notes from their notetaker only for those classes they actually attend. They should not expect support services to provide them with copies of notes which may have been taken for other deaf and/or hard of students enrolled in the same class.

If students know that they will not be attending class, they should contact the appropriate service providers as soon as possible before the class begins. This is especially important if the student is the only one in the class receiving the particular service.

Various institutions have their own policies regarding the provision of classroom-based services for students who are frequently absent. Most drop notetaking and other classroom-based services for students who are frequently absent from class for insufficient reasons.

Institutions may consider establishing a policy that if the student does not show up for class within 10 minutes of the beginning of class and he/she is the only student for whom notes are being taken, the notetaker should feel free to leave the classroom and report to the notetaker coordinator for possible reassignment during that time period.

Obtaining the notes. The student should familiarize himself/herself with procedures for obtaining notes from the notetaker. If the notetaker uses special paper that makes several copies (NCR paper), the student may get the notes at the end of the class. If the notes must be photocopied, the student should know the institution's projected turn-around time for copying.

Problem-solving. The student should discuss any problems regarding notes with his/her notetaker as soon as possible. If this does not resolve the problem, the student should inform the notetaker coordinator immediately regarding any problems with the quality of the notes. The student should report to the notetaker coordinator recurrent classroom absences or tardiness on the part of the notetaker.

If the problem persists, the coordinator should intervene with the student, notetaker and instructor as needed to resolve the issue.

Communication with the notetaker. The student should discuss the notes periodically with the notetaker. If communication between the two is difficult, they should make appropriate use of interpreting services.

The student can discuss strategies that may help with study techniques with his/her notetaker, e.g., putting stars next to important topics, underlining important points, and circling information the faculty member says will definitely be on the test.

The student and notetaker should devise a means to contact each other outside of class. The notetaker should be informed as soon as possible when the student will not be in class. If space permits, the notetaker may be assigned a mailbox or mailfolder in the support office where he/she can receive internal mail.

Evaluating notetaking services. Students using notetaking services have a responsibility to participate in their evaluation. Often this is done by asking the student to complete an evaluation form on each of his/her notetakers, usually at the completion of the term. Students should consider areas in which their notetakers excel as well as areas in which they need improvement.

Faculty responsibilities

The instructor is a key to assuring the quality of any notetaking system. However, if the instructor has not previously had a deaf or hard of hearing student in his/her class, it is unlikely that he/she has the information and experience to fully understand the student's need for notetaking.

Information needed by instructors. Busy faculty members cannot be expected to find applicable information on their own; support personnel should take the responsibility to see that faculty members obtain the proper orientation to notetaking and other special services available to the deaf or hard of hearing student. This should include information about laws and regulations underlying the provision of special services to deaf and hard of hearing students, as well as students with other disabilities in college.

The general topic lends itself to group and individual in-service training sessions, particularly for faculty new to the institution. If sessions are presented with administrative input and support, then the stage is better set for faculty to view support services positively. The following is a basic list of information the faculty needs:

Specific to notetaking, the instructor should know in advance of deaf and/or hard of hearing students' arrival in his/her class:

(a) why these students need special notes,

(b) the names of the students who are using the notes,

(c) the notetaker's name and responsibilities,

(d) the name and location of the notetaker coordinator and/or the instructor's contact person if more information is needed or problems occur.

Needs of the notetaker in their class. Instructors also need an understanding of the notetaker's needs in the classroom. With this understanding the instructor can create an environment that will ensure the best possible notes. Needs of notetakers include:

(a) copies of handouts and hard copies of overheads so these can be included in the notes to be given the student(s)

(b) advance notice for media that will be used in the class, including videotapes, films, slides, multimedia presentations, and other technology

(c) freedom of the notetaker to ask the instructor for clarification, repetition, or explanation

(d) assistance of the instructor in reserving a specific seat for the notetaker in order to see the chalkboard and/or screen.

Quality Assurance. Faculty members can be of great assistance in assuring the quality of the notetaking program. One way an instructor can assist is to occasionally review copies of notes, especially early in the term, and to give feedback to the notetaker. The instructor need not read the notes from every class period. After a few classes, an occasional scan of the notes may suffice to enable the faculty member to make suggestions on improving the notes.

If the instructor occasionally reads over the notetaker's notes, checks once in a while with the notetaker to ask how things are going, and otherwise treats him or her as a valuable member of the teaching team, the notetaker's morale and notes will improve.

The notetaker coordinator may ask the faculty member to fill out the information on an evaluation form at the completion of the course. (See Appendix C, "Evaluation of notes.")

Applications of technology in notetaking

Since the early 1960's, technology has had a growing influence on notetaking for deaf and hard of hearing students, which is likely to increase. Some technology was introduced by resourceful students before the establishment of academic support services as we know them today.

A particular classroom technology may be more effective in one classroom setting than another. Straight lecture courses such as history, government, and business law calling for text only, may be ideal for computer-aided notetaking in one form or another, whereas classes that often use charts, graphs, diagrams, and numbers are likely to be more difficult for a computer with an alphanumeric or stenographic input to follow.

Generally the deaf and hard of hearing students most likely to welcome notetaking technology in the classroom are those who have adequate English skills but are less than fluent in sign language. These students desire a more complete representation of events in the classroom than speechreading or their sketchy sign language skills alone can provide. Given the necessity of making a choice, these students are likely to prefer a textual version of classroom proceedings over an interpreter.

Audiotape recording. The first application of technology was introduced in the 1960's with the introduction of portable audiotape recorders. In lieu of "real time" notetakers, students would sometimes take tape recorders to class and either pay someone or ask volunteers to transcribe lectures from audiotape into text following the class. This approach had merit but was quite labor intensive, a single lecture generally requiring several hours or more to transcribe. Also, the transcriber was unable to reproduce material that was displayed on the chalkboard, overhead projector, or other visual media.

Copies of notes. Sometimes hearing students were asked to make copies while taking their own notes by using carbon paper and giving the copies to their deaf or hard of hearing classmates. However, this procedure was awkward and messy, and didn't work well.

NCR paper. In the late 1960's a system using "National Cash Register" (NCR) paper was developed and field tested by researchers at the National Technical Institute for the Deaf (NTID). This system included a two-ringed plastic binder (with tips for notetakers printed on the cover) which accepted a packet of NCR paper refills. Typically, the notetaker, often a hearing student volunteer enrolled in the class, would give the second copy to his/her deaf or hard of hearing classmate immediately after class (Stuckless, 1969).

This binder and its NCR refills, commonly called the "NTID Notetaker", proved quite useful during a period before photocopying became generally available and remains in considerable use today.

Photocopying. With the present availability and low cost of photocopying, single and multiple copies of notes can be reproduced and distributed readily to deaf and hard of hearing students, and to others for whom their distribution is appropriate such as the instructor. Such distribution is more easily done when a paid notetaker is used than when the notetaker is a fellow student in the class. The "fellow student" notetaker may be reluctant to lend his/her notes to another student or staff member for duplication due to concern about their not being returned or not being available when he/she needs them.

Pen-based computers. Pen-based computers, also referred to as personal digital assistants (PDA), usually take the form of small hand-held personal computers, but also can be quite large (see "Electronic copyboards" described later in the report). Because of their compactness, the hand-held systems allow the user to take the computer to the information rather than the information to the computer, e.g., classes which require field trips.

Unfortunately, pen-based technology is not yet as flexible or as reliable as educators might wish. For example, most systems recognize only block printed characters because cursive writing contains too many variables and individual differences for the software to recognize. In addition, these systems do not allow for fast enough input to meet classroom demands. However, the technology may become more useful as it develops and is certainly worth watching.

Computer-assisted notetaking (CAN). Computerized notetaking allows students to watch the computer monitor, TV monitor or LCD panel as the notetaker types the lecture on a laptop computer. Since lecture speaking rates average about 150 words per minute (Stuckless, 1994) and rapid typing about half that speed, the operator is not able to capture every word with this system. Instead, he/she must be trained to listen for chunks of information and to type the main idea with as much supporting detail as possible, i.e., as notes.

CAN permits the deaf or hard of hearing student to scan the text as it is being typed, and offers the student hard copy as notes for future use.

The operator may need to collaborate with the deaf or hard of hearing student or a volunteer in the class to record chalkboard information, especially charts, graphs, numbers, and math equations. After class, during the editing process the operator may be able to insert such information into the document with a scanner.

The CAN system works best with the following setup:

- notebook computer with active matrix screen and appropriate software
- large size monitor (with PC/TV adapter) or overhead projection if LCD color projection panel is used
- printer
- mobile computer workstation, including steno chair and necessary cables
- adjustable classroom lighting

C-Print. C-Print is a computer-aided speech to transcription system now being researched as a pilot project at NTID. (Henderson, McKee, & Stinson, 1994) The system uses an IBM compatible laptop computer with a standard keyboard, a computer shorthand software package called Productivity Plus, and Word Perfect, a word processor. The shorthand software contains an abbreviation dictionary that expands the operator's customized abbreviations into complete words or phrases with a few key strokes.

The major advantage of C-Print over computer-assisted notetaking (CAN) is its potential speed. With a trained operator, C-Print can transcribe speech at well over 100 words per minute, producing detailed notes. Like CAN, this system permits the student to scan the text on a matrix screen or monitor as it is being input, and the text can be printed out as hard copy, with optional editing.

Real-time captioning. This is a variation on the real-time captioning associated with television broadcasting where captions appear below the picture. A "text only" version is typically used in the classroom. This full screen text capability allows the student time to look at the chalkboard or instructor and return to the screen without missing any information.

Real-time captioning uses a highly trained captionist to transcribe spoken language, e.g., a lecture, using a computer-compatible court stenograph machine connected to an IBM compatible computer containing special software. Speeds in excess of 250 spoken words per minute can be attained, permitting verbatim transcription into text, usually within a second or two of the spoken utterance (Stuckless, 1983, 1994).

The captionist maintains a customized software dictionary and updates the dictionary when new terminology is introduced in the course. Text can be stored in a word processing program and can be edited and/or printed, filed, transmitted through e-mail, or transferred to diskettes (Eisenberg, 1995). The system allows students, faculty, and tutors to have a near verbatim transcript of the classroom information at the end of the class or an edited version later, usually within a day.

Additional options for the steno translation software allow for students to have their own computer keyboard hooked up with the captionist's unit. This arrangement permits the deaf or hard of hearing student to input a question or comment for the captionist to voice. In addition, the text appears on the student's own monitor, allowing him/her to add personal notes directly on the computer.

Keyboard-input technologies and repetitive motion injuries. Terms such as carpal tunnel syndrome, repetitive motion injuries, and overuse syndrome have become uncomfortably familiar to many sign interpreters. These terms refer to a nerve disorder caused by continual force of a repeated hand motion, resulting in inflamed tendons in the wrist. The number of such diagnoses nationally is growing, and one of the contributing factors is the predominance of keyboarding in the office environment. This has implications for notetakers who use a keyboard to input text into a computer.

The National Institute for Occupational Safety and Health (NIOSHA) suggests at least a 10-minute break for every hour of high demand work at the computer. Certainly computer-aided notetaking qualifies in this regard. Where possible, CAN classroom duties should not be scheduled back to back. Time between active notetaking assignments can be filled with a variety of related tasks such as editing notes.

Numerous publications are available on the general subject with suggestions about positioning the body and the hands, warming up with appropriate

exercises, and as indicated earlier, breaking up keyboarding activities with other tasks.

Other technologies

Computer scanners. Scanners allow notetakers to incorporate handouts and other printed materials into notes almost instantaneously. The notetaker uses a flat bed or smaller hand-held scanner to input information which can then be stored as a computer file and retrieved at any time. Optical character recognition software (OCR) converts the image of hard copy text into electronic text which can then be edited with a word processor. Image editing software allows the user to alter and enhance photographs, drawings, charts or other images (PC Novice, Jan 1994, p. 44,45).

Hard copy of videotape captions. Hard copy of the text appearing in captioned videotapes can be useful to students, especially if they receive and read them before viewing the tape. Notetakers can often make arrangements to produce these copies if they know in advance that videotapes will be used in the classroom. This can also be done with the text or spoken material in other pre-produced media presentations.

Electronic Copyboards. A copyboard resembles a whiteboard in appearance and is available in several sizes for a variety of classroom situations. Used in lieu of an ordinary chalk or whiteboard, it allows the instructor to reproduce hard copies of whatever is written or drawn on the board.

When electronic copyboards are used for the instructor's own diagrams and written comments, the notetetaker is free to focus on the spoken word. Students can refer to the hard copy to supplement the classroom notes.

Electronic mail. Electronic mail can be used by notetakers to transmit notes directly and speedily to students who have electronic mail capability.

Video conferencing. One notetaker can serve students in multiple sites in a distance learning environment. Notes can be distributed by e-mail, diskette, or hard copy (Coombs, Schuchman, and Kinner, 1994).

Summary

Notes are crucial to the success of a student in college, but present problems for most deaf and hard of hearing students who attempt to take and rely exclusively on their own notes. Notetaking services, like other services such as interpreting, tutoring, and the use of assistive listening devices, assist these students in gaining equal access to information from the classroom and the course.

The quality of the notetaking service depends on the skills of the notetaker who is responsible for recording as accurately and readably as possible the information and discussion shared in class, stressing the important points in a clear, uncomplicated grammatic structure for convenient use by deaf and hard of hearing students. This report has described specific features in the notetaking process, and suggestions for the selection, training, and supervision of notetakers.

Postsecondary educational institutions should establish resources to ensure that a quality support system is in place. The number of students needing notetaking services is likely to influence how the service is organized and administered. Options such as the use of professional and/or student notetakers, and the use of paid and/or volunteer notetakers were discussed in this report, as were responsibilities of both the instructors and the students who receive the service.

The report concluded with brief descriptions of a variety of technologies that have been and can be incorporated into the notetaking service, depending on institutional resources, numbers of students being served, and other factors. However, technology notwithstanding, a pencil and a notebook in the hands of a good notetaker will continue to be a staple in furnishing deaf and hard of hearing students with serviceable notes.

This report has not directly considered the needs of students with other disabilities for notetaking services. However, its authors hope that with adaptation as needed, much of the information and suggestions contained in this report will prove useful in providing notetaking services for these students also.

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Postscript pertaining to laws and regulations[1]

This report does much to dispel the notion that notetaking is "no big deal." It is clear from the level of detail regarding substantive notetaking skills as well as the detail regarding the establishment of policies, practices, and procedures for coordinating the provision and use of notetaking services that service providers should give a great deal of thought to the notetaking services provided by their institutions.

Key points addressed include the fact that notetaking is itself a critical service and is not redundant to interpreting, for example. In addition, the recognition should be made that notes that may be adequate for or useable by hearing students may not be either adequate for or useable by deaf and hard of hearing students. The relevant language issues must be dealt with in a systematic and educated fashion. This chapter offers a "best practice" model of notetaking while discussing less thorough models which are nonetheless prevalent, and indeed adequate, on many college campuses. While the law does not require that institutions provide "Cadillac" notetaking services, a clear rationale for doing so is contained in this report.

Notetaking spans the spectrum from excellent to poor quality. The law requires equal access, nothing more. Institutions must confront the determination of what constitutes basic access and what constitutes more than access and whether it should provide more than basic access. Part of the answer may lie in institutional philosophy: Does the institution provide only a basic postsecondary education, or does it aspire to more and in what ways?

Somewhere along this continuum, however, lies the threshold between access and the lack thereof. Legal liability focuses on this line, a moving target in some respects; for what is basic access for one student may not be sufficient for another. Focusing on a moving target is unsettling, if not fraught with risk. The answer may lie in providing notetaking services of a quality that avoids overly focusing on the line of demarcation between access and lack of access. If attention is turned to assuring a certain level of quality, certain factors emerge that would appear to provide both access for students and protection for institutions: (a) training provides an assurance of an acceptable level of notetaking quality; and (b) paying notetakers in some fashion assures a minimal level of control over the product.

An institution need not pay for notetaking services, but if unpaid services lead to a poor quality product that fails to provide the deaf or hard of hearing student with an equal opportunity to benefit from the educational program, an institution may find itself spending much more on defending its practice than the cost of notetaking services. As the authors point out, "payment" can take many forms: stipends, tuition abatements or subsidies, and various other campus related "perks." The keys are consistent quality and control over it. The methods are as various as the institutions themselves. Each institution must make that determination for itself. Since a well-reasoned policy is often an institution's best defense, prudence would suggest that institutions make such determinations with due deliberation.

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[1] Contributed by Jo Anne Simon, consultant/attorney specializing in laws and regulations pertaining to students with disabilities.

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Appendix A

NOTETAKER'S CODE OF ETHICS AND GUIDELINES

(Adapted from "Notetaker's Code of Ethics and Guidelines" prepared and used by California State University at Northridge)

1. Notetakers shall keep all assignment-related information strictly confidential. Notetakers shall use discretion when discussing a class or students in that class. Seemingly unimportant information, innocently divulged, may prove damaging in certain situations. If problems should arise among any of the persons involved, the notetaker shall refer these persons to the notetaker's immediate supervisor.

2. Notetakers shall transcribe lectures as faithfully and completely as possible. Notetakers must learn to store information as they listen in order to record all of the major points of the lecture. Correct English is required at all times. Diagrams, examples, student questions and answers, and student comments shall be included in the notes to provide a complete picture of classroom activities. It is better to provide information students do not need than to take the chance that they will miss something important. When in doubt, notetakers should write. Most instructors provide clues either directly or indirectly about what will appear on tests. Anything which is stressed in the classroom should be stressed in notes. Teacher comments about the important items should be recorded.

3. Notetakers shall not advise, interject personal opinion, or counsel the student. Just as notetakers may not omit important information, they may not add personal opinions to recorded notes. Notetakers should remember that they are not responsible for what is said and should not permit their own feelings to interfere with or add to the lecture. Paid notetakers are not to participate in class other than to ask questions for clarification or spelling. Notetakers and students frequently become friends, but that personal relationship must not be allowed to interfere with the service for which the notetaker is paid.

APPENDIX B

NOTETAKER APPLICATION RATING FORM

Applicant's Name _____ Phone Number (_____) _____

Audio Tape _____ Evaluator _____ Date _____

Starting Rate _____ Hire _____ Do Not Hire _____

		1	2	3	4	5	
APPEARANCE	unprofessional	☐	☐	☐	☐	☐	professional
WRITING SKILLS							
1. Legibility	inappropriate	☐	☐	☐	☐	☐	appropriate
2. Spelling	unclear	☐	☐	☐	☐	☐	clear
3. Points of emphasis	unclear	☐	☐	☐	☐	☐	clear
4. Use of illustrations and diagrams	inappropriate	☐	☐	☐	☐	☐	appropriate
5. Complete sentences when possible	inadequate	☐	☐	☐	☐	☐	adequate
6. Clear use of abbreviations	inappropriate	☐	☐	☐	☐	☐	appropriate
7. Organized information	hesitant	☐	☐	☐	☐	☐	smooth
8. Examples noted	inaccurate	☐	☐	☐	☐	☐	accurate
9. Sufficient margins	unclear	☐	☐	☐	☐	☐	clear
10. Questions and answers noted	inappropriate	☐	☐	☐	☐	☐	appropriate
11. Speaker indicated	inadequate	☐	☐	☐	☐	☐	adequate
12. Page, class title, date, name	unclear	☐	☐	☐	☐	☐	clear

OVERALL PERFORMANCE

1. Areas to Work On: _____

_____

_____

_____

_____

2. Evaluator's Comments/Recommendations: _____

_____

_____

_____

_____

3. Rating: ☐ Outstanding ☐ Above Average ☐ Satisfactory ☐ Unsatisfactory

Editor's Note: This page courtesy of the National Center on Deafness at California State University at Northridge.

APPENDIX C

EVALUATION OF NOTES

Notetaker _____

Evaluator _____ Date _____

CRITERIA	N/A	GOOD	NEEDS IMPROVEMENT	SPECIFIC EXAMPLES
Was unbiased, didn't write opinions in the notes				
Put page number, class title, and date on each page				
Used 8-1/2 x 11" paper				
Used a black pen				
Wrote legibly				
Left blanks when unsure				
Used correct spelling, or indicated "SP" if unsure				
Used white space effectively				
Heard and marked points of emphasis				
Defined difficult vocabulary				
Used complete sentences				
Used examples				
Used diagrams and illustrations if possible and appropriate				
Organized the information				
Included enough information				
Speaker indicated				
Used abbreviations				
Reworked the notes later. (Checked spelling, added emphasis, organizational strategies, completed words, added punctuation, etc.)				

General comments on the completeness and usefulness of the notes:

Suggestions for two things the notetaker should concentrate on improving:

From *The classroom notetaker: How to organize a program serving students with hearing impairments:* Jimmie J. Wilson (1996), Washington, D.C.; Alexander Graham Bell Association for the Deaf.